CLAIMS

1. A method of making a targeted enzyme, comprising

a) selecting a modified enzyme that has a peptide inserted into it relative to a corresponding unmodified enzyme, wherein the unmodified enzyme and the selected modified enzyme have a measurable enzymatic activity, and

b) replacing the inserted peptide in the modified enzyme with a targeting peptide that binds a target, wherein the enzyme with the targeting peptide has the measurable enzymatic activity and binds the target.

2. The method of Claim 1 further comprising making the modified enzyme of step (a) by inserting the peptide into the unmodified enzyme.

3. The method of Claim 2 wherein the peptide is inserted into the unmodified enzyme at a random position.

4. A method of making a targeted enzyme, comprising

a) selecting a modified enzyme having a measurable enzymatic activity from a library of modified enzymes, said library comprising modified enzymes that have an inserted peptide that a corresponding unmodified enzyme does not have, and said unmodified enzyme having the measurable enzymatic activity, and

b) replacing the inserted peptide in the selected modified enzyme with a binding peptide that binds a target, wherein the enzyme with the binding peptide has the measurable enzymatic activity and binds the target.

5. The method of Claim 4 further comprising making the library of modified enzymes of step (a) by inserting a peptide into the unmodified enzyme.

6. The method of Claim 5 wherein the peptide is inserted into the unmodified enzyme at random positions.

7. The method of Claim 4 further comprising repeating steps (a) and (b) such that an enzyme is produced that has the measurable enzymatic activity and has a plurality of binding peptides.

8. The method of Claim 7 wherein two or more of the plurality of binding peptides bind the same target.

9. The method of Claim 7 wherein two or more of the plurality of binding peptides bind different targets.